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(54) **POSITIONAL TRACKING ASSISTED BEAM FORMING IN WIRELESS VIRTUAL REALITY SYSTEMS**

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(57) **ABSTRACT**

Embodiments of the present disclosure support a head-mounted display (HMD) wirelessly coupled to a console. The HMD includes a positional tracking system, a beam controller and a transceiver. The positional tracking system tracks position of the HMD and generates positional information describing the tracked position of the HMD. The transceiver communicates with a console via a wireless channel, in accordance with communication instructions, the communication instructions causing the transceiver to communicate over one directional beam of a plurality of directional beams. The beam controller determines a change in the positional information. Based on the change to the positional information, the beam controller determines a directional beam of the plurality of directional beams. The beam controller further generates the communication instructions identifying the determined directional beam, and provides the communication instructions to the transceiver.